

Getting to the Conceptual Understanding of the Standards

Disciplinary Core Idea Component (e.g., ESS2.A):

ESS2.A - Earth Materials + Systems

Grade:

middle school (6th)

Disciplinary Core Idea (DCI) Use the Framework and Appendix E. What is the specific content for this grade level? What is the conceptual understanding expected for this grade level?

Interaction of subsystems - geosphere, hydrosphere, atmosphere, biosphere

Energy flow + cycling of matter resulting in chemical + physical changes

Systems interact over different temporal + spatial scales \Rightarrow changes can occur slowly or abruptly

Conceptual Understanding - How systems interact w/ one another + affect one another
- Interactions occur at different time + spatial scales

- Dynamic Earth

- How does energy + matter result in physical + chemical changes

- Key understanding is systems

Which Performance Expectation(s) could be bundled for instruction that would lead to the conceptual understanding of the core idea?

6-ESS2-1 \Rightarrow Effect of H₂O cycle on Rock cycle (how they interact)

6-ESS2-4

6-ESS2-2

Getting to the Conceptual Understanding of the Standards

Setting to the Conceptual Understanding of the Standards		What information in the assessment boundary provide further clarification?
What information from the clarification statement(s) of the PE(s) further clarify the desired conceptual understanding?		ESS2-1 => no naming of specific minerals
ESS2-1 Chemical + physical changes to geosphere by the hydrosphere		ESS2-4 => Quantitative values for latent heat not essential
ESS2-2 spatial + temporal scale of geospheric processes; connect to rate of energy release/transfer (fast/large amt. of energy; slow/small amt. of energy)		
ESS2-4 Water cycle w/ an emphasis on rate of energy transfer + multiple pathways		
Which practices could enhance student understanding of the conceptual idea? (Appendix F)	Which crosscutting concepts could enhance student understanding of the conceptual idea? (Appendix G)	Connections to other content standards?
- modeling - Explanation - Data	Energy + matter Scale, Proportion + Quantity Systems + System models Cause + Effect Stability + change	ESS2-2 SS01 => How geospheric processes shape local geographic features (possible phenomenon?)